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# Money in Motion: Modernizing Canada's Payment System

*Tremendous advances in information technology allow for payment systems that are faster, cheaper and better able to meet users' needs. It's time for Canada's payment system to play catch-up.*

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## The Study In Brief

Payment systems, like plumbing, do not attract much attention when they are working well. A failure, on the other hand, is cause for alarm: as a broken pipe can flood a basement, broken payments can disrupt the financial system. Subpar performance short of a crisis, though less apparent, can also be damaging. Backed-up plumbing causes much inconvenience in familiar ways. A strained payment system also can be very costly. In that regard, Canada's payment systems need some timely maintenance.

A variety of systems make up the Canadian payments landscape: cash, credit cards, debit cards and cheques among others. Most prominent in terms of volume and value are the clearing and settlement systems operated by the Canadian Payments Association (CPA). But the CPA's systems are now long in the tooth, forcing users to deal with technologies from the 1980s and 1990s. The tremendous advances in information technology since then allow for systems that are faster, cheaper and better able to meet users' needs. Some countries have already dispensed with paper payments transactions and replaced them with digital payments. An efficient payment system can contribute to the competitiveness of a country's economy.

A first step toward modernizing the Canadian payment system would be replacement of current cheque processing with digital methods. This step alone should save Canadian businesses several billions of dollars per year. It will require reorganizing the CPA's clearing and settlement systems as a hub-and-spoke and replacing payee-pull cheques (where the payee's institution submits the transaction to the settlement system) by payer-push digital payments (where the payer's financial institution submits the transaction). These steps can be facilitated by a commitment to financing the CPA's major capital projects through borrowing and recouping the costs through future dues. The success of this modernization will depend on an extensive effort to educate consumers and businesses, especially small businesses, of the benefits of a payer-push electronic payment system.

Modernization of the CPA's payment systems should not stop with eliminating cheques. There is also a need for enhanced information to accompany payments transactions so as to allow seamless end-to-end processing from payer to payee and for real-time processing to limit payment-system risk.

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## Payment systems are the lifeblood of an economy. The payments industry itself accounts for only a small share of GDP, but its importance goes well beyond its size.

Businesses rely on it to pay workers and suppliers, and households use it to pay for what they buy. The value of non-cash payments made in Canada during 2013 was more than 20 times the Gross Domestic Product. A safe, efficient payment system fosters and supports the transactions that make a modern economy work.

Payment systems, like plumbing, do not attract much attention when they are working well. A failure, on the other hand, is cause for alarm: as a broken pipe can flood a basement, broken payments can disrupt the financial system. A computer error at a single US bank, for example, forced the Federal Reserve Bank of New York to advance the bank more than US$22 billion in emergency overnight credit to keep the entire payment system from freezing up.[1]

Subpar performance short of a crisis, though less apparent, can also be damaging. Backed-up plumbing causes much inconvenience in familiar ways. A strained payment system also can be very costly.

A payment system consists of a notional recordkeeping arrangement that tracks the ownership of purchasing power.[2] The payments industry, like other information industries, is ripe for makeover through advances in digital technology. While the essence of the industry has remained unchanged, many of its outward trappings have been transformed in recent decades. People can now issue payment instructions through mobile phones or through the Internet rather than by exchanging physical objects and transferring paper instructions. The continuing evolution of payments has attracted many new entrants into the industry who offer new ways for performing old tasks.

The payment system's importance to the Canadian economy, together with the rapid pace of change, raises two sets of questions.

1. How well are Canadians served by the current arrangements? What improvements are necessary? What are the obstacles to such improvements and how can they be overcome?
2. What does the rapid development of information technology mean for public policy toward payments?

### Canadian Payment Systems: A Snapshot

A variety of systems make up the Canadian payments landscape: cash, credit cards, debit cards

This paper elaborates remarks the author presented at the "Transforming the Canadian Payments System" conference held the C.D. Howe Institute, October 28, 2014. The author was a member of the federal government's 2012 Task Force for Payment System Review and, prior to that, a director of the Canadian Payments Association. He is indebted to his colleagues in both places and referees for sharing their insights.

1 See Illing (2003).

2 Scott (2014) defines a payment system as "a network of interconnecting entities that facilitates the exchange of data required to initiate, authorize, clear and settle cash or credit claims between payors and payees."

and cheques among others.[3] Most prominent in terms of volume and value are the clearing and settlement systems operated by the Canadian Payments Association (CPA) (See Table 1).

The Automated Clearing Settlement System (ACSS), the CPA's retail payment system,[4] processed almost seven billion transactions in 2014 with a total value of $6 trillion. The average value per transaction was $994. The ACSS consists of a number of payment streams (Table 1) dealing with different types of payment. Cheques and other paper payments, the largest in terms of value, account for 44 percent of the total, followed by automated direct deposits with a 30 percent share. In terms of volume, point-of-sale transactions dominate with more than 56 percent of total transactions.

The ACSS payment streams differ from each other with respect to the processes used. Transactions can be either *payer-push* where the payer's financial institution submits the transaction to ACSS or *payee-pull* where it is the payee's institution that submits the transaction.

The processes differ according to the transaction's purpose. The automated bill-payment stream, where billers collect for recurring bills such as utilities, phones and health clubs, operates through payee-pull, whereas the automated direct-deposits stream, where employers, corporations and governments initiate payments for wages, dividends, interest and benefits, operates through payer-push. In these and other cases, the arrangements reflect the transactions' nature, as it is the payment initiators who submit the transactions to the ACSS. Such an alignment is straightforward because the party who initiates the transaction also submits it into the payment system.

Otherwise, the initiator must send the transaction to the other party who then enters it into the payment system. Though a favourable alignment between initiation and entry into the payment system occurs in other ACSS payment streams, it does not apply for cheque payments. For these, the cheque writer initiates the transaction but the payees are the ones who submit it into the payment system through their financial institution.

The CPA also operates the Large Value Transfer System (LVTS), which handles far fewer but much larger transactions. LVTS is an electronic wire service that transfers funds between financial institutions. It offers its users greater speed than ACSS together with finality of payment, assuring that payments will not be reversed.[5] Its 7.9 million transactions in 2014 accounted for more than $38 trillion in value with an average transaction value of almost $5 million. LVTS is a payer-push system where payers both initiate transactions and enter them into the system.

## Elements of a Good Payment System

Clearly, an efficient payment system should meet the needs of its users. These include:

- Speed: Speed refers to the time between the initiation of a payment and its delivery to the recipient. Large businesses often have to meet large payment obligations on the same day as they expect incoming payments to cover them.

3 Task Force (2010) provides a comprehensive overview of the Canadian payments industry.

4 Though characterized as a retail payment system, ACSS is used heavily by businesses and governments for a large share of their payments.

5 While LVTS payments avoid the overnight risk inherent in cheques by settling during the day, the passage of payments through LVTS can be delayed by its risk controls. Such delays create uncertainty for users, especially those making large, time-sensitive payments.

**Table 1: Selected ACSS Payment Streams**

| Type of Payment Item | Purpose | Volume *(000)* | Value *($millions)* | Average Transaction Values *($)* |
|---|---|---|---|---|
| Paper Items | Cheque and other paper payments | 715,259 | 2,989,156 | 4,180 |
| Automated Funds Transfer Debits | Pre-authorized debits such as recurring bill payments | 756,681 | 639,870 | 845 |
| Automated Funds Transfer Credit | Direct deposits such as salaries, wages and government transfers | 818,512 | 2,041,273 | 2,495 |
| ABM Transactions | Withdrawals from machines associated with customer's financial institution | 208,702 | 25,293 | 121 |
| Point-of-sale Debits and Credits | Transactions initiated at either on physical location or online | 3,839,154 | 169,441 | 44 |
| Total ACSS | | 6,776,372 | 6,735,573 | 994 |

Source: CPA, Statistics.

Similarly, consumers expect timely processing of their bill payments so they won't be overdue. Delays in both cases can be costly. Real time payment processing is the ideal.

- Certainty: Payees need the predictably that any payments they receive will not be reversed. Without this assurance, they face potentially costly uncertainty about whether they can depend on these funds.
- Linked: A linked electronic payment system allows users, especially businesses, to integrate payment transactions with their other recordkeeping systems.
- Low cost: A payment system should have low costs, including usage fees and charges. Just as important are the user's own expenses such as the costs of preparing, initiating and receiving payments.

A good payment system that meets these qualities contributes to the competitiveness of the Canadian economy by reducing the resources that consumers, businesses and government devote to managing their payments.

How well do the CPA's core payment systems meet these needs?

- Only LVTS among CPA payment streams operates in real time. Still, although more than 85 percent of CPA transactions by value take place through LVTS, these payments account for less than 1 percent of CPA transactions.
- CPA payment streams differ with respect to their transactions being final and non-reversable.
- Transactions in CPA other than the cheque stream are transmitted electronically.

Despite the favorable features of some CPA payments streams, cheque payments do not operate in real time, fail to offer finality[6] and still rely on the cumbersome exchange of paper items.

The CPA recognizes that users are dealing largely with systems based on 1980s and 1990s technologies. In 2009, in a benchmarking exercise, the CPA warned that it was falling behind other countries in developing electronic payment systems.[7] Four years later, it made initial steps toward modernization in a five-year strategic plan. Initial work on the next generation infrastructure, undertaken in the first two years of the plan, focusses on three streams: identifying desired attributes and a framework for assessing trade-offs; developing appropriate governance structures; and developing engagement processes to garner participant agreement and stakeholder support.[8]

## The Burden of Paper Cheques

Cheque payments fall far short of meeting users' needs. The absence of an electronic replacement for cheques imposes substantial costs on Canadian households, businesses and governments.

Still, without a replacement, Canadians write about 800 million paper cheques per year. Businesses issue 46 percent of these cheques; consumers 42 percent and governments 12 percent.[9] At 25 cheques annually per capita, Canadians rank behind only the French (46 cheques) and the Americans (68 cheques) in their dependence on this method of payment. Meanwhile, some countries have eliminated all paper payments.[10]

Cheque usage in Canada has been declining at about 3-to-5 percent per year over the past decade. Meanwhile, the introduction of cheque imaging by some financial institutions has simplified the steps between cheque writing and the arrival of the funds in the recipient's account.[11] Most of the benefits of cheque imaging, however, accrue to financial institutions through simpler processing and do not directly reduce the costs to users.

Cheques are cumbersome and costly for both households and businesses as well as to their financial institutions (FIs). Cheques must follow a tortuous path: writers send them to payees, payees then convey them to FIs, FIs, in turn, present the

6 Cheque payments can be reversed in some instances as many as six years after the initial transaction.
7 See CPA (2009).
8 CPA (2014).
9 Task Force (2011), p.20.
10 Sveriges Riksbank (2013).
11 While viewing cheque imaging as an overall improvement, Schembri (2014) notes that it may also be a diversion and delay the introduction of electronic payments.

cheques to payers' FIs, payers' FIs remit funds back to payees' FI and these FIs finally deposit the funds into payees' accounts.[12]

The costs to businesses from using cheques include:

- the cost of the cheques themselves;
- employees' time spent authorizing and writing them;
- distribution and mailing;
- the expense to recipients in collecting them; and
- the effort to reconcile cheques with business accounts.

The use of paper cheques denies Canadian businesses the full benefits of their electronic accounting systems. They must transfer information from their business accounts to write cheques and then transfer the information back to their accounts from the cheques they receive.

Scotiabank, for one, estimates that it costs businesses between $9 and $25 to use a cheque.[13] Businesses could save between $1.6 billion ($4.50 per cheque) and $4.4 billion ($12.50 per cheque) annually by writing 350 million fewer cheques every year and using alternatives that are less costly.[14]

While very rough, these forecasts appear consistent with studies of the European experience that suggest that moving from a 100 percent paper-based payment system to 100 percent electronic payments would save 1 percent of GDP per year.[15] Despite these annual potential savings of billions of dollars, Canada has lagged behind countries such as Norway, Sweden and the Netherlands in replacing paper cheques with digital payments.

## Eliminating Cheques

Getting rid of cheques should be the first priority in modernizing the Canadian payment system. The benefits it would bring are clear. But how do we get there? Issues to be addressed in moving forward include the governance of the CPA, restructuring the architecture of the core clearing and settlement system and developing a new financing payment system infrastructure.

### *Reforming CPA Governance*

The reluctance of major financial institutions to move forward with electronic payments is understandable. Replacing cheques digitally would require them to invest in modernizing both the CPA's infrastructure and their own systems. Moreover, the FIs may gain only few benefits from a more efficient payment system as most of the savings would go to consumers and businesses.[16] Unlike individual innovators who benefit until their competitors catch up, members of a collective, such as banks, dissipate the benefits from their innovation by competing with each other to bring it to market. Innovation undertaken by a group can turn out to be an added expense that provides little value to them.

12 For further details, see CPA, "Automated Clearing Settlement System, Clearing of Cheques."
13 Scotiabank (2014).
14 For this author's calculation, businesses are assumed to write one-half of the total 700 cheques used for payments each year.
15 See Humphrey (2003), p. 159.
16 See Humphrey (2000), pp. 26-27.

Historically, CPA governance arrangements have been weighted toward FIs. Prior to 1981, the Canadian Bankers' Association operated the clearing and settlement system. After that year's transfer by federal legislation of these responsibilities to the CPA, the CPA's directors were drawn entirely from financial institutions until 2002.

From to 2002 to 2015, the CPA 16-member board consisted of a chair appointed from and by the Bank of Canada, three members appointed by the Minister of Finance and 12 appointees by CPA members. Of these 12, six were appointed from banks, two from credit unions and four from other members.[17] While each director had an equal vote at board meetings, an institution's payments volume determined the weight of its vote at annual meetings on such crucial issues as budget approval.

In December 2014, Parliament approved changes to CPA governance legislation that

i) replaces weighted voting by one vote per member institution;

ii) transfers budget approval from members at the annual meeting to the board of directors;

iii) reduces the board from 16 to 13 directors;

iv) increases the number of independent directors from three to seven, with these directors nominated by a committee with a majority of independents and elected by CPA members;[18]

v) gives the minister of finance the power to issue a directive to the CPA if its decisions are not in the public interest; and

vi) requires the board to submit a five-year plan annually to the minister for approval.[19]

These significant changes appear to give the CPA the independence it needs to move ahead with projects in the public interest.

### *Changing the Core*

At the core of any payment system are its clearing and settlement arrangements. This is how financial institutions exchange the claims they have acquired and settle the resulting imbalances. The CPA's current clearing and settlement system for cheques mimics the organization of old clearing houses, held probably in taverns, where bankers met to exchange claims. Like the tavern clearing houses, these systems operate through bilateral exchanges of claims where each member must exchange with every other member through a "spaghetti bowl" network of two-sided ties.[20]

The difficulties of coordination in the spaghetti bowl may have contributed to the fate of the Canadian Payments Association's Truncated Electronic Cheque Presentation project. This initiative was designed to simplify retail payments by replacing the physical transport and exchange of cheques with the transfer of cheque images. The project was scrapped after six years in 2002 in light of its complexity and the diminishing use of cheques.[21] More recently, the CPA has revived its

17 Dingle (2003, p.12) notes that bank members regularly met together in advance of board meetings.

18 The *Canadian Payments Act*, Section 16(1) stipulates that directors from financial institutions are expected to act "with a view to the best interests of the Association," making their commitment to the CPA their primary concern.

19 See Government of Canada (2014).

20 With n members, this arrangement leads to n (n-1) exchanges. Thus, a system with 10 members could require up to 99 two-party exchanges.

21 See CBC (2014).

cheque-imagining initiative and FIs have begun to use cheque images to reduce the burden of dealing with paper cheques.[22]

FIs have simplified the exchange of cheques somewhat by using agents to work on behalf of multiple institutions for their clearing activities. As a result, while the systems have moved beyond taverns and the exchange of claims at one central gathering place, they have not replaced the spaghetti bowl.

The CPA could avoid the shortcomings of the spaghetti bowl by replacing it with "hub-and-spoke" clearing where members transact only with the entity at the centre.[23] They would notify the hub when making a payment and the hub would notify them about the payments they receive. Such an arrangement is common among payments systems in other countries.

The hub-and-spoke has a number of advantages over the spaghetti bowl. It reduces the costs for the harmonization of members' systems by allowing them to coordinate with the hub rather than the other members. This simplification would also ease the entry of new members to clearing and settlement, allowing them to harmonize with just the core. Finally, the hub-and-spoke arrangement is more supportive of innovation because any system-wide change in technology requires members to adapt only to the core and not to all other members.

### *From Cheques to Giro*

ACSS uses payee-push cheque arrangements based on the British model. This system relies on payees introducing payment instructions into the system by depositing cheques into their FI. Meanwhile, the payer-push or giro payments model, common in continental Europe, relies instead on the payer to submit the payment instructions into the payment system through its FI.

Comparison of the two systems (Table 2) shows that the payer-push system avoids the need for the payer to send payment instructions to the payee. It also simplifies the communication between the financial institutions by condensing two steps: i) the payee's FI asking the payer's FI to make the payment; and ii) the payer's FI transferring funds into the payee's FI into just one operation.

The difference between the two approaches is more striking when the payer has insufficient funds. With payee-pull, the no-pay transaction requires the payee's FI to send its payment request to the payer's FI and that the payer's FI reply that the payment will not go through. With payer-push, the payer's FI stops the transaction itself before communicating with the other FI. This difference means that a payer-push system can avoid the payee-pull's elaborate and costly procedures to deal with no-pay transactions.

A payer-push system, already incorporated in LVTS and several ACSS payment streams, would also ease the transition from paper to digital payments, thereby facilitating innovation. By having fewer steps between initiation and completion of payments, fewer processes need to be modified to keep the system up to date. Countries that have succeeded in eliminating cheques have had the advantage of starting from a payer-push giro system.[24]

22 The CPA has subsequently revived its cheque-imaging initiative. See CPA News.

23 The ACSS already has an element of hub-and-spoke, which FIs use to send transaction information to the CPA as well as to their bilateral partners, to allow it to keep track of member balances.

24 These countries include Belgium, Denmark, Finland, Germany, the Netherlands, Norway and Sweden. See Sveriges Riksbank (2013).

**Table 2: Payee-pull vs. Payer-push**

| Payee-pull (cheques) | Payer-push (giro) |
|---|---|
| **Sufficient Funds** | |
| 1. Payer sends cheque to payee<br>2. Payee deposits cheque in its bank<br>3. Payee's bank presents cheque to payer's bank<br>4. Payer's bank makes pay decision and withdraws funds from payer's account<br>5. Payer's bank remits funds to payee's bank<br>6. Payee's bank places funds in payee's account | 1. Payer sends payment instruction to its bank<br>2. Payer's bank withdraws funds from payer's account<br>3. Payer's bank remits funds to payee's bank<br>4. Payee's bank places funds in payee's account |
| **Insufficient Funds** | |
| 1. Payer sends cheque to payee<br>2. Payee deposits cheque in its bank<br>3. Payee's bank presents cheque to payer's bank<br>4. Payer's bank refuses payment because of insufficient funds and informs payee's bank<br>5. Payee's bank does not place funds in payee's account | 1. Payer sends payment instruction to its bank<br>2. Payer's bank refuses to pay because of insufficient funds |

Source: Author's compilation.

*Financing Modernization*

In the past, the CPA has relied on membership fees based on past volume of payments for financing capital projects. This approach fostered members' resistance to undertaking new projects because it left annual dues unpredictable with sharp increases forced by such projects. Also some members opposed basing dues on past volumes because they might not be a good gauge of future activity.

The CPA should adopt other approaches to financing major projects such as establishing a fund for enhancements or through borrowing. Of the two, borrowing seems preferable. Use of an enhancement fund would lead to delay by requiring accumulation before undertaking projects. Borrowing allows projects to proceed as they are needed and spreads the cost over the project's life. Borrowing also allows fees to be determined by current transaction volumes once the project is in place.

## Addressing Stakeholders' Concerns

Users in other countries appear to have embraced the change from paper to digital payments. Meanwhile, Canadians have already shown willingness to adopt new modes of payment. They quickly embraced Interac for making payments by becoming among the heaviest debit card users in the world.

A nucleus of consumers still depends on cheques for making payments and needs to be persuaded of the benefits from replacing them. However, their attachment to paper can be accommodated without forcing them to abandon it fully. With payer-push,

they could initiate payments by sending paper instructions to their FI rather than the payee. This change would actually simplify payments for them by allowing them to send multiple instructions together to their FI instead of sending them separately to each biller. Billers, too, can simplify the process by sending remittance forms with their bills that customers can forward to their FIs. Even if some users stick to using paper for initiating payments, there will still be benefits from simplifying the remaining steps in the process.

Similarly some consumers, especially those who receive social benefits, depend on cheques for receiving payments. Already progress has been made towards transferring them to direct deposit. The US Treasury now makes over 98 percent of its monthly benefit payments this way.[25] The Canadian government has set a target date of April 2016 for consumers to enrol in direct deposit and, to facilitate this shift, has set up arrangements through which consumers can sign up for direct deposits from many programs at one time.[26]

Recent estimates suggest that from 1 to 4 percent of all Canadians, and a higher proportion of low-income groups, remain unbanked.[27] While the unbanked cannot be paid through direct deposit, in some places they now can receive payments through prepaid debit cards. These cards have a number of advantages: holders can avoid holding large amounts of cash, they also can avoid the risk of lost or stolen cheques, and they can make payments as needed. The federal government and all state governments in the US now offer benefit payments through electronic debit cards.[28]

Businesses, especially small businesses, are heavy users of cheques because of their endearing qualities. Cheques act as receipts; provide disbursements and the information needed to reconcile them with accounting systems. Most businesses have already embraced electronic bookkeeping, but the continued use of paper forces them to transfer information from their electronic accounts in order to write cheques and then back again when payment cheques are received. These steps are relics from another age when, now, the ordering of a pizza – choosing the size, crust, toppings and payment method – can be done digitally.

Electronic payments allow businesses to manage their payments together with the rest of their accounts. With them, businesses would be able to issue payment instructions and remittance data that can be transferred seamlessly though financial institutions to the recipient's books. Although large businesses are likely to more readily see the benefits and eagerly adopt electronic payments, small businesses may be more hesitant.

As with consumers, those businesses that want to stick with paper or lack the ability to use electronic payments would still be able to submit paper payment instructions to their financial institution. From that point onward, the payment would be processed electronically.

To gain the full benefit of digital payments, the elimination of cheques needs to be complete. If not, financial institutions would be forced to maintain a cheque payment stream together with its replacement. Similarly, cheque users would impose

25 US Treasury (2015).

26 Government of Canada (2015). These programs include the Canada Child Tax Benefit, the universal Child Care Benefit, tax refunds, GST/HST credits, Canada Pension Plan, Old Age Security, Employment Insurance, Veterans allowance and benefits, and interest payments on government bonds.

28 See EBT and Direct Express.

costs on others by forcing them to continue with expensive processes to deal with cheques.

The British attempt to abolish cheques by decree provides a warning: any attempt to modernize payments can become a "third-rail" issue without user acceptance.[29] Consumers and businesses must see the advantages of digital payments in order to switch away from cheques. It will likely take extensive public education to make all Canadians comfortable with such a change.[30]

## Regulation and Innovation

Moving toward a digital payment system should not be an end in itself. It is but one step to continually moving the payment system forward. As a massive ledger recording payments and receipts, any payment system will likely experience a continuing stream of innovations that have already reshaped the landscape by adding new features to existing services and displacing existing ways of doing things.

For example, payment cards are no longer the preserve of financial institutions and credit card networks. Prepaid cards are now offered by merchants and other issuers. PayPal has created a buffer between customers and merchants that allows customers to keep their payment details private. Square now allows small businesses that otherwise could not establish a relationship with an acquirer to accept credit cards at low cost. Major innovations in payment offerings are emerging not only from the major credit card firms, but also from Silicon Valley companies such as Google, Microsoft and Apple.

Traditional payment suppliers, like other parts of the financial system, face more extensive regulation than almost any other sector. In contrast, most innovators lie outside the scope of regulation and lack the full powers of established suppliers. Both sides continually urge policymakers to level the playing field. Incumbents argue that it is tilted against them because new entrants do not face the same rules as they do. New entrants, in turn, argue the field is unbalanced because they lack the same powers as incumbents. Such arguments obscure the real issues – why and who. Why should an activity be regulated? Who, as a result, should be regulated?

The payment landscape consists of many participants doing different things. They act as messengers by relaying instructions between transacting parties; they shift funds from payers to payees; they hold the balances used for payments and they act as agents by assisting households, businesses (payroll processors and billing processors) and financial institutions (credit card acquirers and cheque processors). They can perform just one of these roles or several.

Different payment activities raise different issues. Some activities need regulation to protect users' funds, some to preserve the stability of the payment system and others to maintain the security of transactions. Payment activities are also regulated because of their impact on third parties, to protect privacy, to foster competition and to influence "fair" pricing.[31]

It is the nature of an activity that should determine whether and how its suppliers should be regulated.[32] Granted, regulation based on

29 Public outcries forced the UK Payments Council to back off its hard deadline for eliminating cheques in 2011. See Task Force (2011, p.21).

30 For example, the skilful communications campaign for eliminating the penny eased the transition by setting out clear consistent procedures.

31 Task Force (2010) summarizes the rules and regulations that govern the payments industry.

32 Consistent with this approach is Schembri's (2014) proposal that the payment systems be subject to regulation proportional to risk.

activities can create an illusion of an uneven playing field. Incumbents may appear to be more heavily regulated than new entrants. But the greater regulation of incumbents can result from their broader range of activities. But, by the same token, they can perform more activities because they conform to the rules of these activities. New entrants should be able to perform additional activities if they accept the applicable rules for those activities. Regulating payment businesses on the basis of only the activities they perform would interfere least with the innovation needed to provide a payment system that best meets the future needs of Canadians.

At present, eligibility for CPA membership applies only to institutions subject to federal or provincial guarantees or to members of the Investment Dealers Association. The evolution of the payments landscape might lead to the emergence of new suppliers outside the CPA that could enhance payment efficiency. Their participation in CPA processes should be governed by their role and the risks they pose to the overall payment system.

## Conclusion

Both the CPA's systems, ACSS and LVTS, are now long in the tooth, forcing users to deal with technologies from the 1980s and 1990s. The tremendous advances in information technology since then allow for systems that are faster, cheaper and better able to meet users' needs. An efficient payment system can contribute to the competitiveness of a country's economy.

A first step toward modernizing the Canadian payment system would be replacement of current cheque processing with digital methods. This step alone should save Canadian businesses several billions of dollars per year. It will require reorganizing the CPA's clearing and settlement systems as a hub-and-spoke and replacing payee-pull cheques by payer-push digital payments. These steps can be facilitated by a commitment to financing the CPA's major capital projects through borrowing and recouping the costs through future dues. The success of this modernization will depend on an extensive effort to educate consumers and businesses, especially small businesses, of the benefits of a payer-push electronic payment system.

Modernization of the CPA's payment systems should not stop with eliminating cheques. There is also a need for enhanced information to accompany payments transactions so as to allow seamless end-to-end processing from payer to payee and for real-time processing to limit payment-system risk.

The rapid change in the payment industry fuelled by advances in information technology will challenge regulators. Some emerging payment products will require regulation to protect users' funds, to preserve the stability of the payment system and to maintain the security of transactions. Tailoring regulation to the nature of different payment activities provides the best way of assuring a dynamic system to serve Canadian needs.

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